

LISTING OF CLAIMS

1. (original) A heating cable comprising a first conductor which extends along the length of the cable, a second conductor which extends along the length of the cable, a separation layer which extends along the length of the cable and is interposed between the first and second conductors, and an outer insulating jacket extending along the length of the cable and around the first and second conductors and the separation layer, wherein the first and second conductors are connected at one end of the cable in series such that if the first and second conductors are connected at the other end of the cable to respective poles of a power supply equal currents flow in opposite directions through adjacent portions of the conductors, the first conductor is formed such that it has a positive temperature characteristic, and the separation layer is formed such that the electrical resistance it provides between adjacent portions of the conductors reduces with increasing temperatures.

2. (original) A heating cable according to claim 1, wherein the first and second conductors are coaxial and the separation layer is tubular, the first conductor being located inside the tubular separation layer and the second conductor being located outside the tubular separation layer.

3. (original) A heating cable according to claim 2, wherein the first conductor is formed from twisted together components each of which comprises a fibre core around which a positive temperature coefficient wire has been wrapped to form a helix.

Claims 4-11. (cancelled)

12. (new) A heating cable according to claim 2, wherein the second conductor is a heating wire wrapped around the tubular separation layer to form a helix.

13. (new) A heating cable according to claim 3, wherein the second conductor is a heating wire wrapped around the tubular separation layer to form a helix.

14. (new) A heating cable according to claim 1, wherein the separation layer is formed such that it has a negative temperature characteristic.

15. (new) A heating cable according to claim 2, wherein the separation layer is formed such that it has a negative temperature characteristic.

16. (new) A heating cable according to claim 3, wherein the separation layer is formed such that it has a negative temperature characteristic.

17. (new) A heating cable according to claim 1, wherein the separation layer is formed such that it melts if heated to a predetermined threshold temperature.

18. (new) A heating cable according to claim 14, wherein the separation layer is formed such that it melts if heated to a predetermined threshold temperature.

19. (new) A heating blanket comprising a heating cable comprising a first conductor, a second conductor, a separation layer, and an outer insulating jacket wherein the first and second conductors are connected at one end of the cable in series, a power supply, means for connecting the first and second conductors at the said other end of the cable to respective poles of the power supply, means for monitoring the end to end resistance of the first conductor and controlling the supply of power to the cable as a function of the monitored resistance, and means for monitoring current flowing through the separation layer and controlling the supply of power to the cable as a function of the monitored current.

20. (new) A heating blanket according to claim 19, further comprising means for reducing the power supplied to the cable in response to increases in the monitored resistance.

21. (new) A heating blanket according to claim 19, further comprising means for terminating the supply of power to the cable if the monitored current exceeds a predetermined threshold.

22. (new) A heating blanket according to claim 20, further comprising means for terminating the supply of power to the cable if the monitored current exceeds a predetermined threshold.

23. (new) A heating blanket according to claim 19, wherein the separation layer is formed such that it has a negative temperature characteristic.

24. (new) A heating blanket comprising:

a heating cable comprising:

a first conductor which extends along the length of the cable;

a second conductor which extends along the length of the cable;

a separation layer which extends along the length of the cable and is interposed between the first and second conductors; and

an outer insulating jacket extending along the length of the cable and around the first and second conductors and the separation layer;

wherein the first and second conductors are connected at one end of the cable in series such that if the first and second conductors are connected at the other end of the cable to respective poles of a power supply equal currents flow in opposite directions through adjacent portions of the conductors, the first conductor is formed such that it has a positive temperature characteristic, and the separation layer is formed such that the electrical resistance it provides between adjacent portions of the conductors reduces with increasing temperatures;

a power supply;

means for connecting the first and second conductors at the said other end of the cable to respective poles of the power supply;

means for monitoring the end to end resistance of the first conductor and controlling the supply of power to the cable as a function of the monitored resistance; and

means for monitoring current flowing through the separation layer and controlling the supply of power to the cable as a function of the monitored current.

25. (new) A heating blanket according to claim 24, further comprising means for reducing the power supplied to the cable in response to increases in the monitored resistance.

26. (new) A heating blanket according to claim 24, further comprising means for terminating the supply of power to the cable if the monitored current exceeds a predetermined threshold.

27. (new) A heating blanket according to claim 26, further comprising means for terminating the supply of power to the cable if the monitored current exceeds a predetermined threshold.

28. (new) A heating blanket according to claim 24, wherein the separation layer is formed such that it has a negative temperature characteristic.